

SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME

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CROSS REFERENCE TO RELATED APPLICATION

This application is based upon Japanese Patent Application

5 No. Hei. 10-182731 filed on June 29, 1998, the contents of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention:

10 This invention relates to a semiconductor device and method of manufacturing a semiconductor, especially to a semiconductor having an insulating isolation film between a source and a drain, and method of manufacturing a semiconductor having a switching function using a semiconductor wafer.

15 2. Related Art:

An LDMOS (Lateral Double-diffused Metal Oxide Semiconductor) is proposed as a MOSFET having a high withstand voltage. FIG. 15 is a schematic diagram illustrating a basic structure of a P-channel type LDMOS 1. In FIG. 15, a P-type impurity diffusion layer 3 is formed in an N-type monocrystal silicon substrate 2, and performs as a drift layer of the LDMOS 1. A channel well layer 4 is formed in the impurity diffusion layer 3 by double-diffusing N-type impurities. A source diffusion layer 5 is formed in the channel well layer 4 by diffusing high concentration P-type impurities thereto. Also a potential fixing diffusion layer 6 for fixing a voltage is formed in the channel well layer 4 by diffusing high concentration N-type impurities thereto. A drain-contact layer 7 is formed in the impurity